

LOGIK SERVICE MANUAL

Order No.

Front Load Washing Machine**MODEL: L614WD13**

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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Chapter 1. General Information

1-1. General Guidelines

When servicing, observe the original dress. If a short circuit is found, replace all parts which are overheated or damaged by the short circuit. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed. Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the service places serviced or not. And be sure safety of that.

1-2. Function indication symbols

(You will see them in the program introduction table)

- ☒ Signify the program has this course.
- ☐ Signify the program doesn't have this course.

Chapter 2 Product Feature

2-1. Features

- **Power-down memory**

With the power-down memory function, the washer can memorize the program's running state in case of power failure or loose plug during washing and continue the selected program after resuming the power supply.

- **Eccentric protection**

When spinning, if the clothes are not evenly distributed, the washer will fluff out and redistribute the clothes and continue spinning after the clothes distribution becomes even.

If the clothes distribution does not become even within the specified time, the washer will not spin to avoid abnormal vibration. In this case, please check the clothes for intertwist and rearrange them, then select "spin" program to spin the clothes.

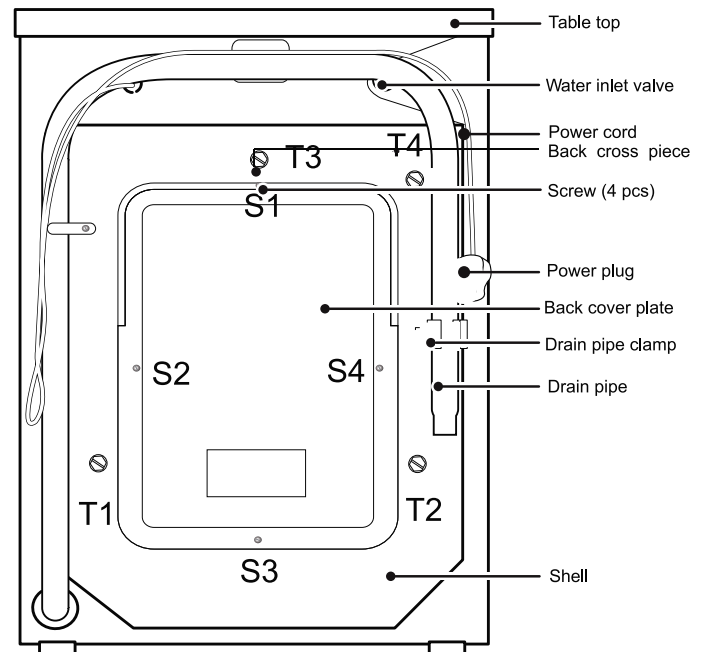
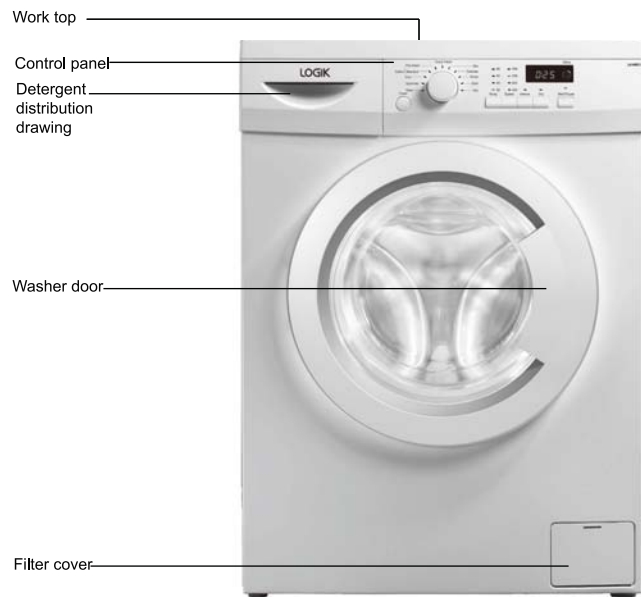
When there are few clothes, the washer may not spin due to eccentric protection. In this case, you can put more clothes into the washer and make them evenly distributed, then continue spinning. In addition, it is normal that the program time will prolong for the washer rearranges and fluffs out the clothes.

2-2. Specification

ITEM \ MODEL	L614WD13
Power supply	220-240V~/50Hz
Max working current(A)	10
Water pressure(MPa)	$0.03 \leq p \leq 1$
Washing power(W)	300
Spinning power(W)	800
Rated load(kg)	6
Spinning speed(R/Min)	1400
Washing programs	11
Power(Heating) (W)	2050
Dimension(H X D X Wmm)	850X525X595
Weight(kg)	67
Noise(Washing)	60
Noise(Spinning)	78
Anti-electric shock	1
Power consumption of the off-mode(W)	< 0.5
Power consumption of the Left-on(W)	< 0.5

Chapter 3 Appearance brief introduction

3-1. Name of parts

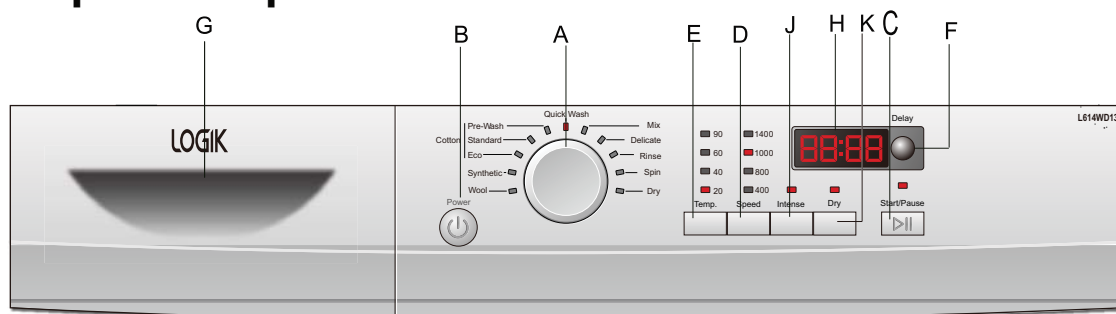


3-2. Net dimension



Model: L614WD13
 DEMENSION(PACKING)
 H×W×D: 890X670X615
 UNITS : mm

Chapter 4 Operational Guidance



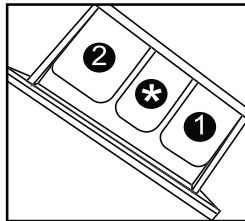
A	Program knob	G	Detergent distribution drawer
B	Power button	H	Display
C	Start/Pause button	J	Intense button
D	Speed button	K	Dry button
E	temp. button		
F	Delay Button		

OPERATIONAL FUNCTIONS

A	→ Program knob	_By turning the knob clockwise/counterclockwise, the required program can be selected. There are 10 programs available. After a program is selected, the corresponding light will go on.
B	→ Power button	_ Press this button to switch on the washing machine. Press it again to switch it off. Press this button gently for 2 seconds to switch off the machine as buttons are soft touch sensitive.
C	→ Start/Pause Button	_ When the washing machine is connected to the power socket and a program is selected, lightly touch this button to start operation. During a wash cycle, touch it lightly, operation will stop and the digits on the screen start blinking. Touch it again to resume operation. To cancel a wash program during a wash cycle, touch this button, when the digits on the screen start blinking, press the Power switch, the program will be cancelled.
D	→ Speed Button	_ Touch this button lightly to select the desired speed. When a speed is set, it will be displayed on the display screen.
Note: Different water temperatures and spinning speeds can be set for different laundries. Wash using the default settings if there is no special requirement.		
E	→ temp. button	_ Touch this button lightly, the washing temperature will be displayed on the display screen. Select a temperature according to the type of laundry.

→Control panel lock function:

Press the "Delay" and the "Start/Pause" buttons simultaneously for 3 seconds after starting a program. Button Functions and wash cycle will be unable to be changed. To unlock press the "Delay" and "Start/Pause" buttons again for 3 seconds.

F	→Delay Button	Touch this button lightly, the washing machine will start operation after a period of time and the corresponding indicator will go on. The range is 0.5-24 hours; each touch of this button increases a half hour. After the button is set, press the Start/Pause button to start countdown of the set time (the time is displayed on the screen until the program ends). Note: The delay time must be longer than the program time; otherwise, the washing machine will start the wash program directly.
G	→ Detergent distribution drawer	_Open the drawer, three compartments can be seen: Compartment 1: Prewash detergent Compartment 2: Detergent for programs 1 to 8. Compartment ★: Softener, conditioning agent, perfume, etc.
		
H	→Display	_Information as remaining wash time and error messages will be shown here. Note: After power is switched on, the display will go on and the remaining wash time decreases. As the water pressure and temperature may differ, the remaining time maybe adjusted accordingly. When the laundry is not balanced during spinning, the time may be automatically prolonged. These are normal phenomena.
J	→Intense button	_ If the laundry is heavily soiled, press this button before starting the program. When the button is pressed, the washing time increases.
K	→Dry button	_ Press this button ,the "dry" indicator light will illuminate. When you select the washing programme first, and then press this button, the machine will perform the washing and drying function.

→To cancel a program

Press the "Start/Pause" button, then switch off the power and the program is automatically cancelled. Turn on the power and use the program selector again to choose another program.

→To cancel audible alarm

Alarm sound can be cancelled if it is required (not recommended)

Switch on the washing machine and turn the program knob to Spin/Drain cycle, then press the "Delay" and "Dry" button, hold on for 3 seconds.

The message "bEEP OFF" will be displayed on the screen, indicating that the alarm sound has been cancelled.

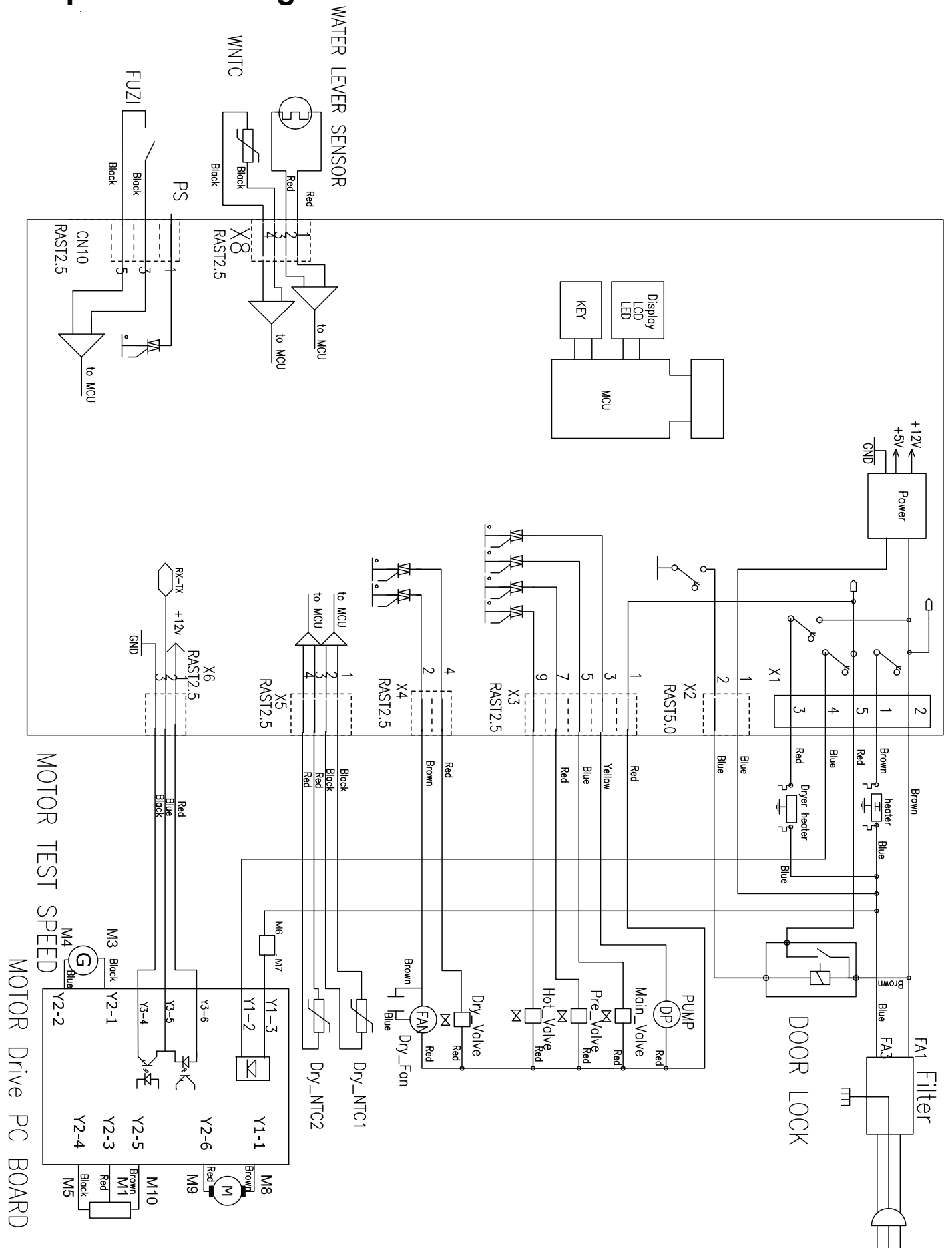
→To reinstate audible alarm

Switch on the washing machine and turn the program knob to Spin/Drain cycle, then press the "Delay" and "Extra rinse" button, hold on for 3 seconds. The "bEEP On" message will be displayed on the screen, indicating that the alarm sound has been reinstated.

→Power-off memory function

In case of abrupt power failure or the need to cut off the power during a program cycle, the present settings will be saved and the preset operation will resume when the power is on again.

Chapter 5 Wiring circuit



Chapter 6 Maintain and Self check

6-1. Caution in maintenance

1. Before the failure diagnosis, watch out for the electric shock and make sure that the power plug is disconnected and then service.
2. After the power switches on, each load will automatically load voltage 220-240V AC .
3. Before touching the PCB, please touch the earthing wire at first to avoid that the PCB is broken by the static.
4. Exposed terminals, PC board, and rotating parts may cause injury and/or electrical shock.
To reduce the risk of electrical shock, disconnect power and allow 60 seconds for capacitors to discharge before servicing.

6-2 Self check

1. How to start

Press the "Temp." and "Speed" button, at the same time, put plug in the socket, then LED will be on. Press "start/pause" button, it will enter the model of the machine, then press the "start/pause" button again, it will implement the test function.

2. Test item

- 1) Door switch is closed for 3 seconds, "88:88" will display. If the door switch is open, "Err1" will display.
- 2) "77:77" will display, if the level of water reach the first level following these steps: firstly, the water is from the pre wash valve for 5 seconds, secondly, the water is from the main wash valve for 5 seconds, thirdly, the water is from the hot water valve for 5 seconds (if there is not hot water, this step ignores), then the water is from the soft water valve (in the mean, the main wash valve and the prewash valve work at the same time) until the first level. "Err5" will display, if the first level does not reach after 2 minutes. ("Err8" will display, if the first level indicates before the water coming from the valve, or it shows reaching the overflow level).
- 3) The Heater works for 10 seconds, "66:66" will display.
- 4) When the water runs out, "55:55" will be on. If there is water after 2 minutes, "Err2" will be on.
- 5) Drain Pump keep working, at the same time, the washing machine works 10s at the speed of 400rpm, then it keep 10s at the speed of 1400rpm, "44:44" will be on.

Please press the "start/pause" button or turn off the power when it need stop the program. If there is something wrong, please deal with the trouble following the indication.

6-3. Model selection

1. Press the "Speed" button, at the same time, put plug in the socket, then it will enter the model of the washing machine.
2. "1490" display on the screen, then press "Speed" button to choose the correct speed 1490/1480/1470/1460/1450/1290/1280/1270/1260/1250/1090/1080/1070/1060/1050 " will be display by turn.
In order to save the right model, please press the "Temp." button. Finally, please cut off the power when the washing work is over. Finally, please cut off the power when the washing work is over.
3. "1460" is the original edition before you choose the model.
4. The model will change as following "1490/1480/1470/1460/1450/1290/1280/1270/1260/1250/1090/1080/1070/1060/1050" when you choose the model for the first time (from the larger number to the little). The model can not change after you set up.
5. For the model "L614WD13" Please choose "1460"

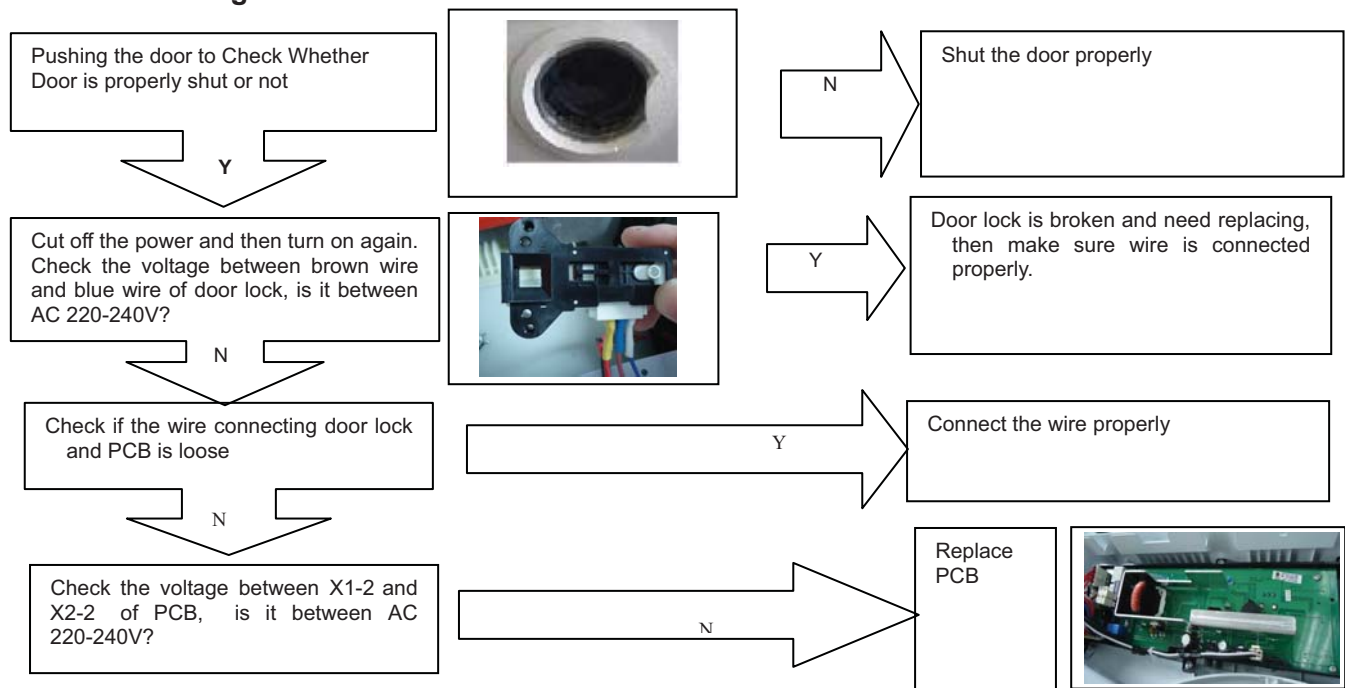
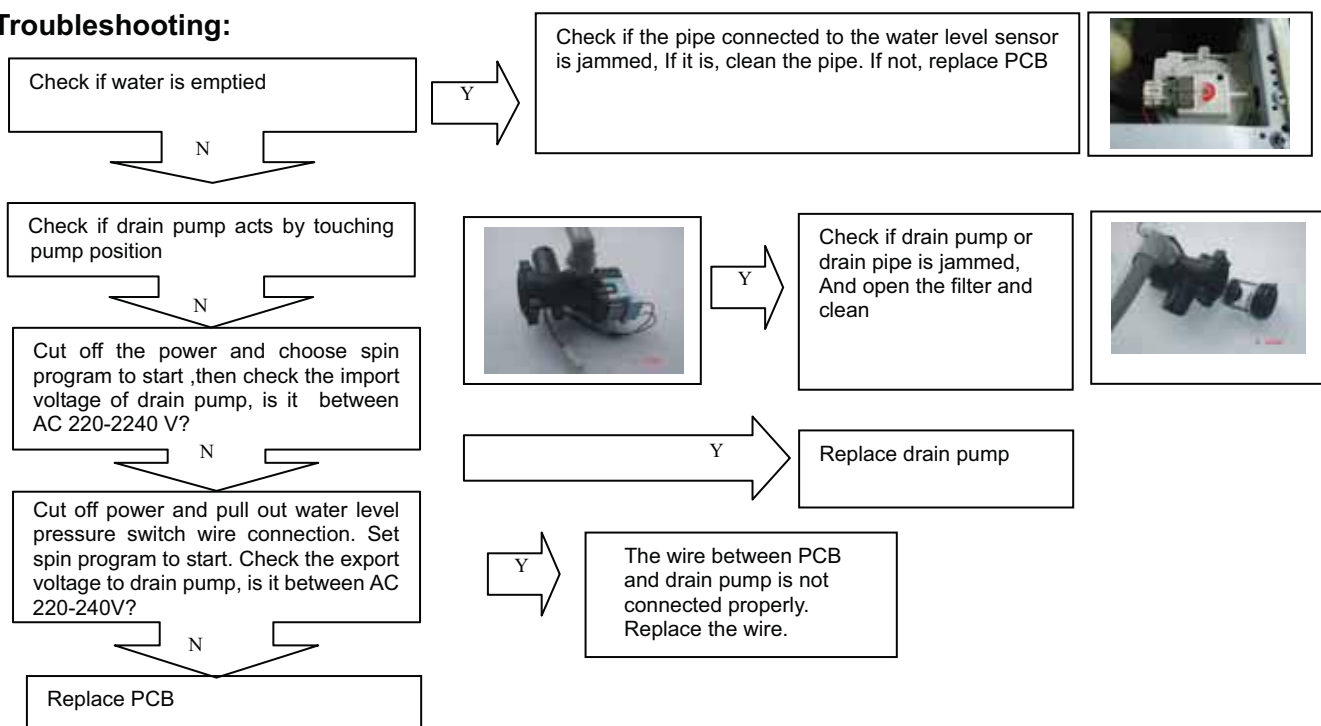
Chapter 7 Error Display and troubleshooting

7-1 Troubleshooting unnormal

The following circumstances do not constitute problems. Do not contact the maintenance service until the problem has been confirmed.

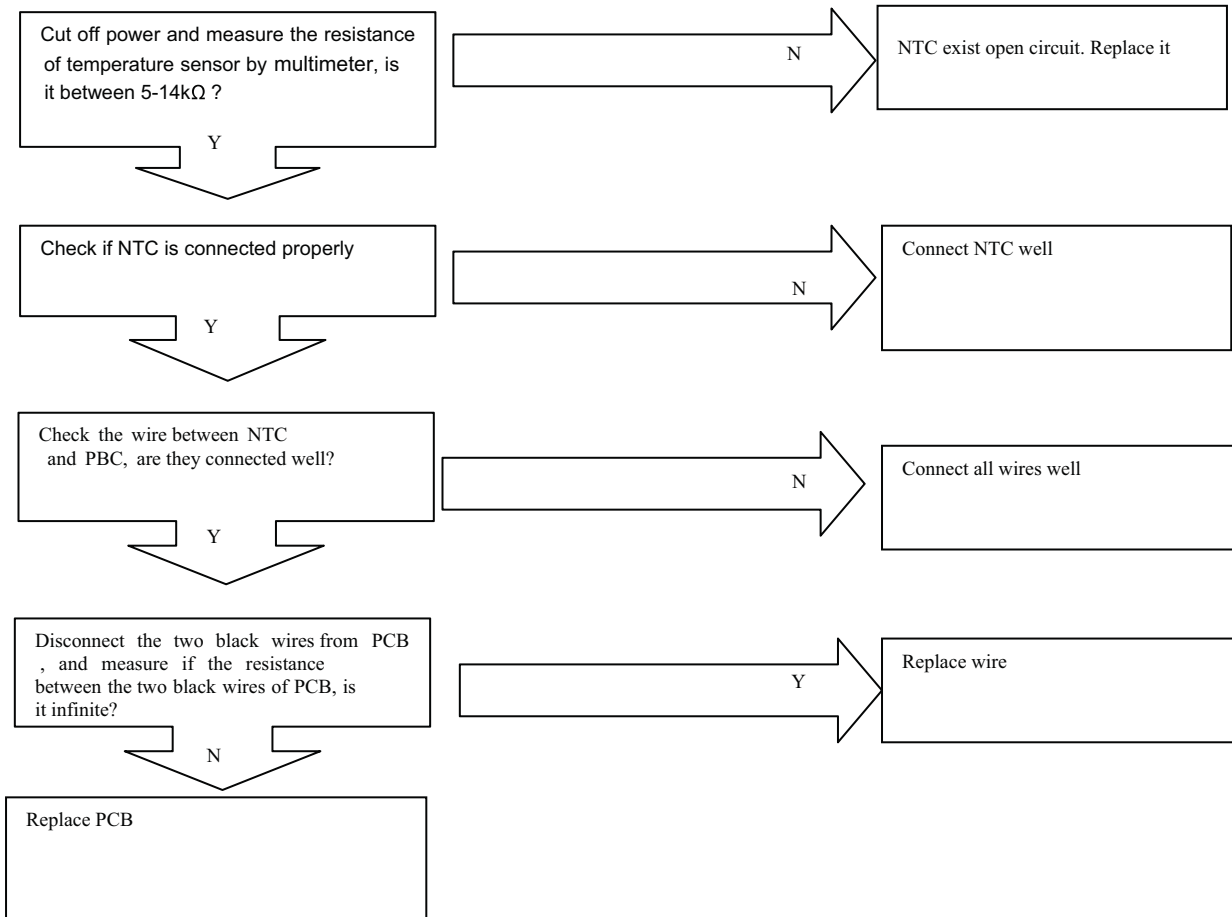
Problem	Possible cause
The washing machine fails to operate	1. Poor connection to power supply 2. Power failure 3. Door is not properly closed 4. Machine has not been switched on
Washing machine can not be filled with water	1. Water tap is not turned on 2. Water pressure is less than 0.03 MPa 3. The inlet hose is kinked 4. Water supply failure 5. The program dial is not properly set 6. The door is not properly closed 7. The inlet hose filter is blocked
The machine is draining while is being filled	1. The height of the drainage hose is below 80cm (if should be within 80-100cm) 2. The drainage hose end is in water
Drainage failure	1. Drainage hose is blocked 2. Drainage hose end is exceed 100cm above the floor 3. The filter is blocked
Strong vibration during spin	1. Not all packing bolts have been removed 2. Washing machine is located on an uneven surface or is not level 3. Machine load is over Max load.
Operation stops before completion of a wash cycle	1. Water or electricity failure 2. Washing machine is in soaking cycle
Operation stops for a period of times	1. Washing machine is in anti-crease soaking cycle 2. Washing machine gives an error message
Excessive foam in the drum, which is spilled to the distribution drawer	1. The detergent is not a low-foaming type or for manual wash 2. Excessive use of detergent

7-2. Error Display

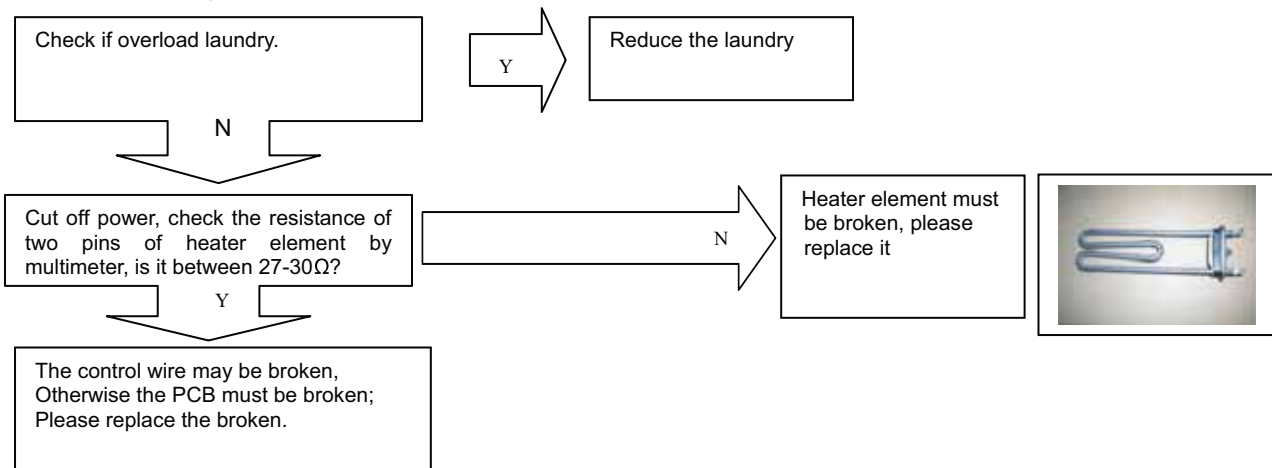
*Err1***Error message:**Door is not properly shut 20s after program is started.**Troubleshooting:***Err2***Error message:** Drainage error, water not emptied within 6 min.**Troubleshooting:**

Err3

Error message:Temperature sensor is not properly connected or damaged.

Troubleshooting:**Err4**

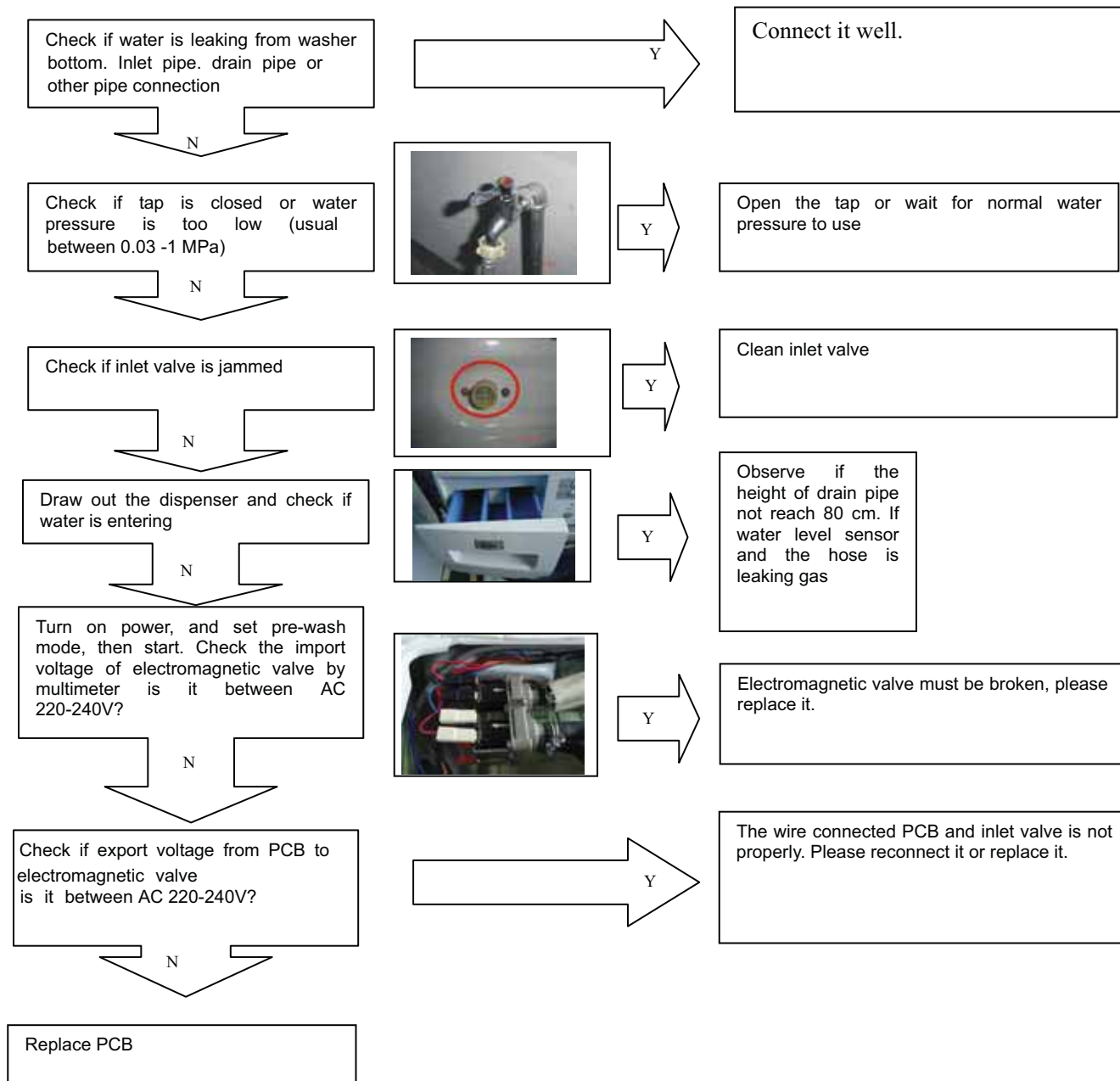
Error message:The heater may be broken(display at the end of a program).

Troubleshooting:

Err5

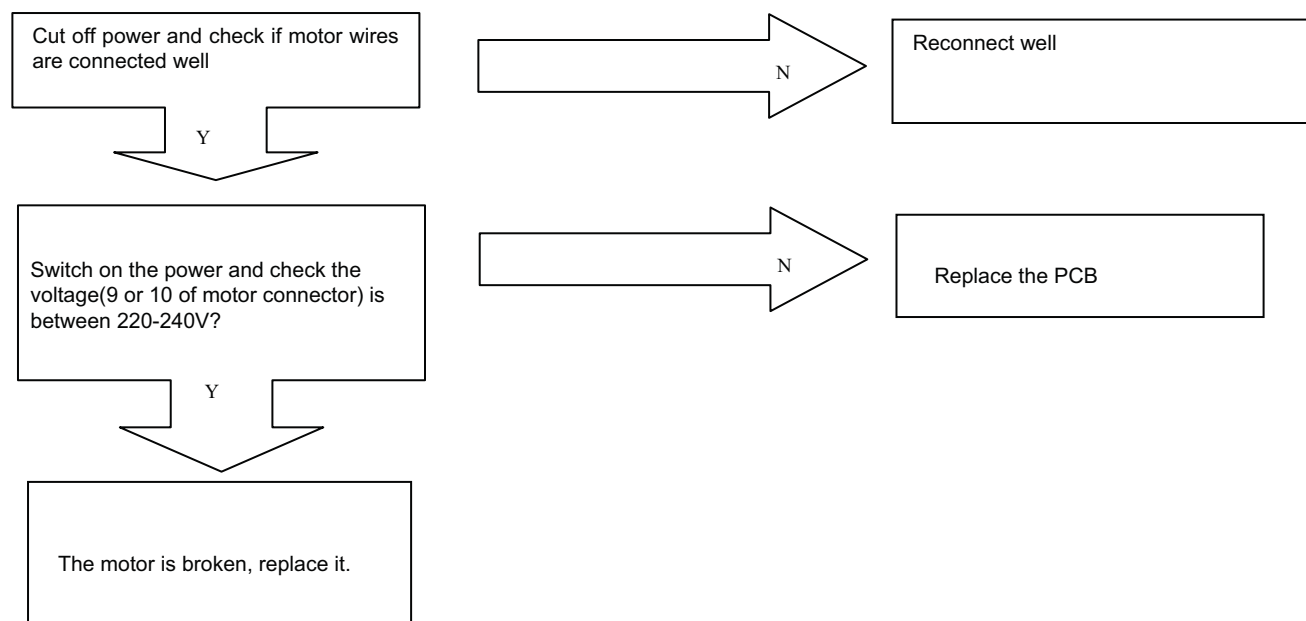
Error message: The required water level is not reached within 8 min.

Troubleshooting:



**Error message. Motor speed is abnormal.**

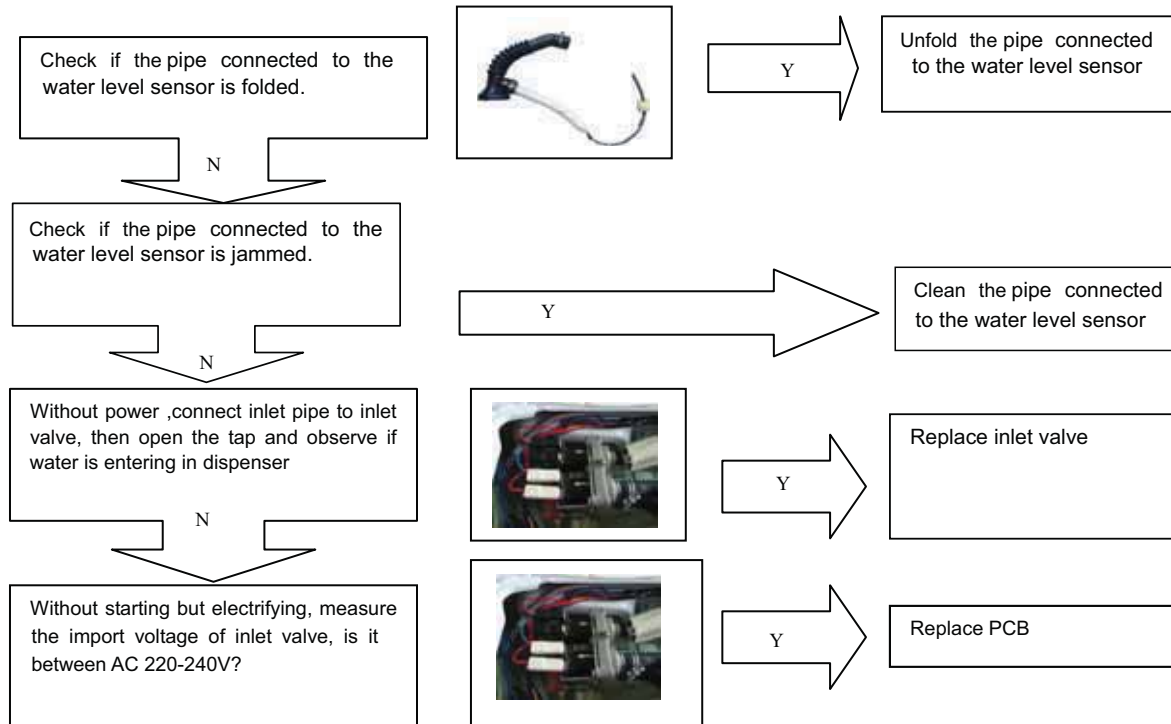
Troubleshooting:



Er r8

Error message. Water level exceeds protection value.

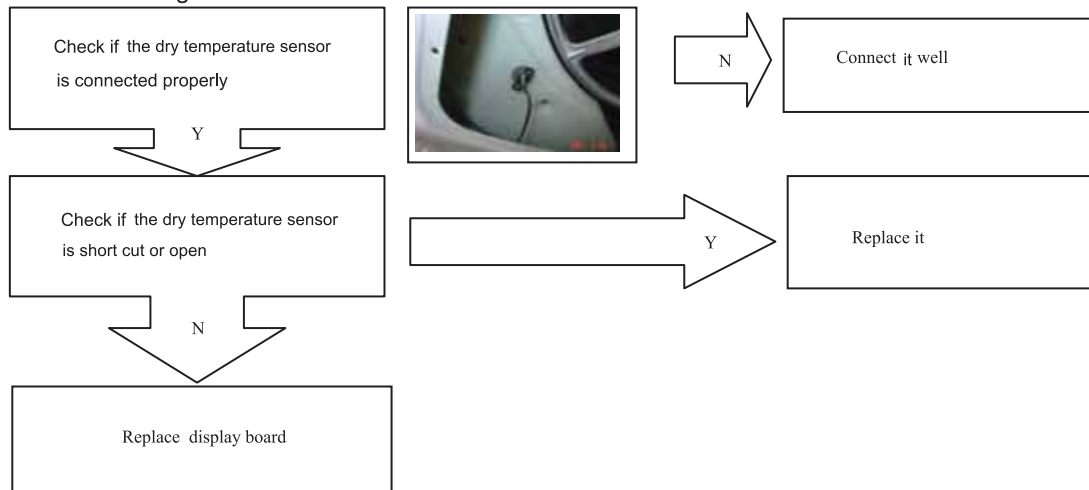
Troubleshooting: Troubleshooting:



Er r9

Error message: The dry temperature sensor short cut or open.

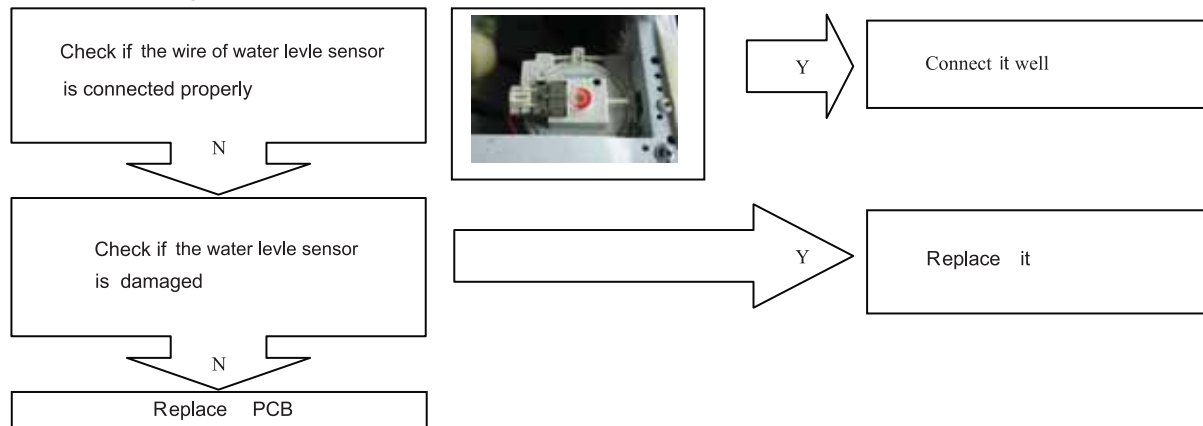
Troubleshooting:



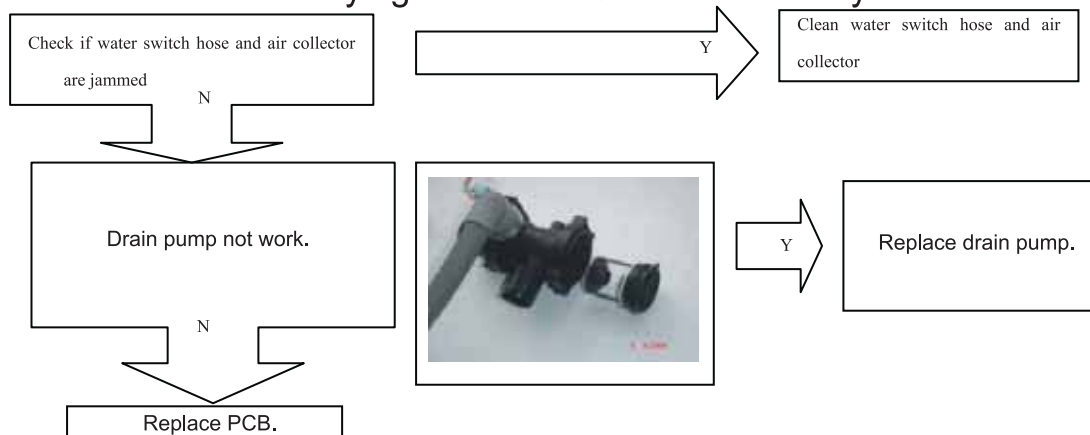
Er10

Error message: The water level sensor circuit short cut or open

Troubleshooting:

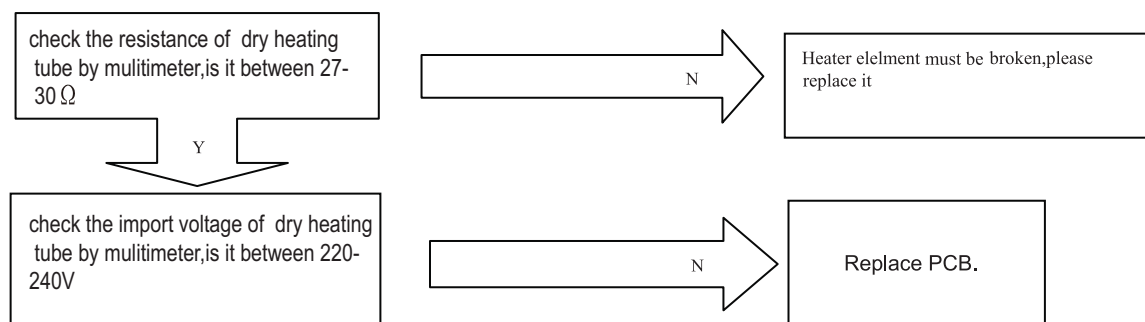
**Er12**

Failure information: drying waterlevel sensor abnormality

**Er13**

Error message: dry heating element error

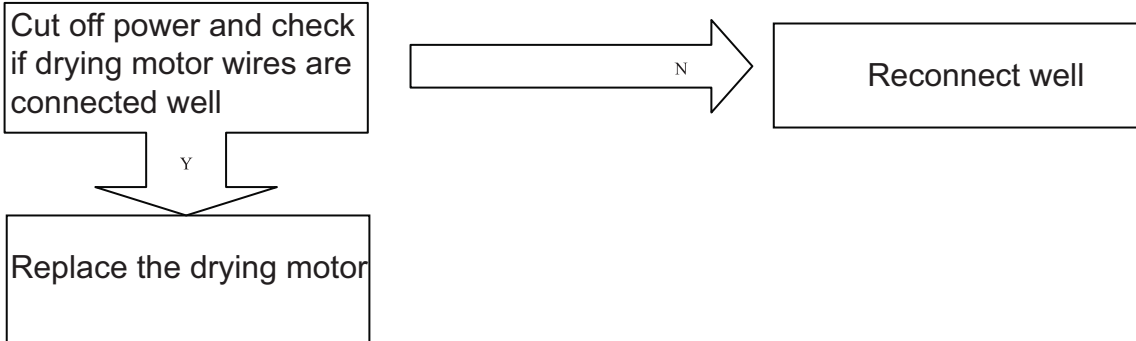
Troubleshooting:



Er14

Error message dry motor error

Troubleshooting

**Unb**

Failure information: machine have the unbalance protect function. When unbalance weight is bigger than a certain value washing machine will not spin and run in a low speed to avoid abnormal vibration and noise.

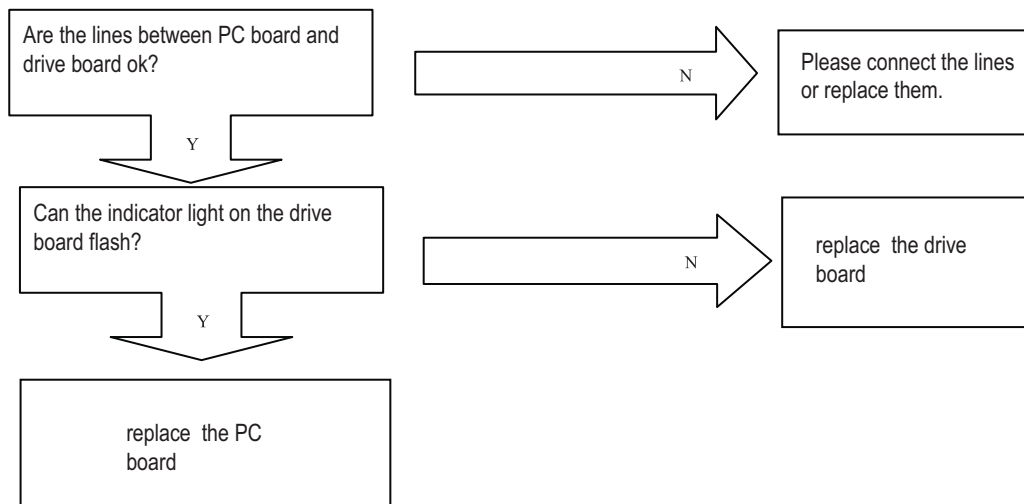
When end user claim the "UNB" question please follow the instruction as below:

1. In case washing 1 piece of laundry (carpet, bed sheet, table sheet, etc) make it symmetrical inside the drum.
2. Lower the wet weight of laundry pieces by wringing manually and placing them back in the drum in symmetrical position.
3. Take out and replace the laundry pieces into the drum in a more balanced position on the inner wall of the drum.
4. Add 1 or 2 pieces of laundry into the drum to lower the unbalance.
5. Restart the spin cycle by choosing "spin only" program.
6. In case the failure persists please send a technician to check it in home.

EUAR

Error message The PCB and the motor can not communicate

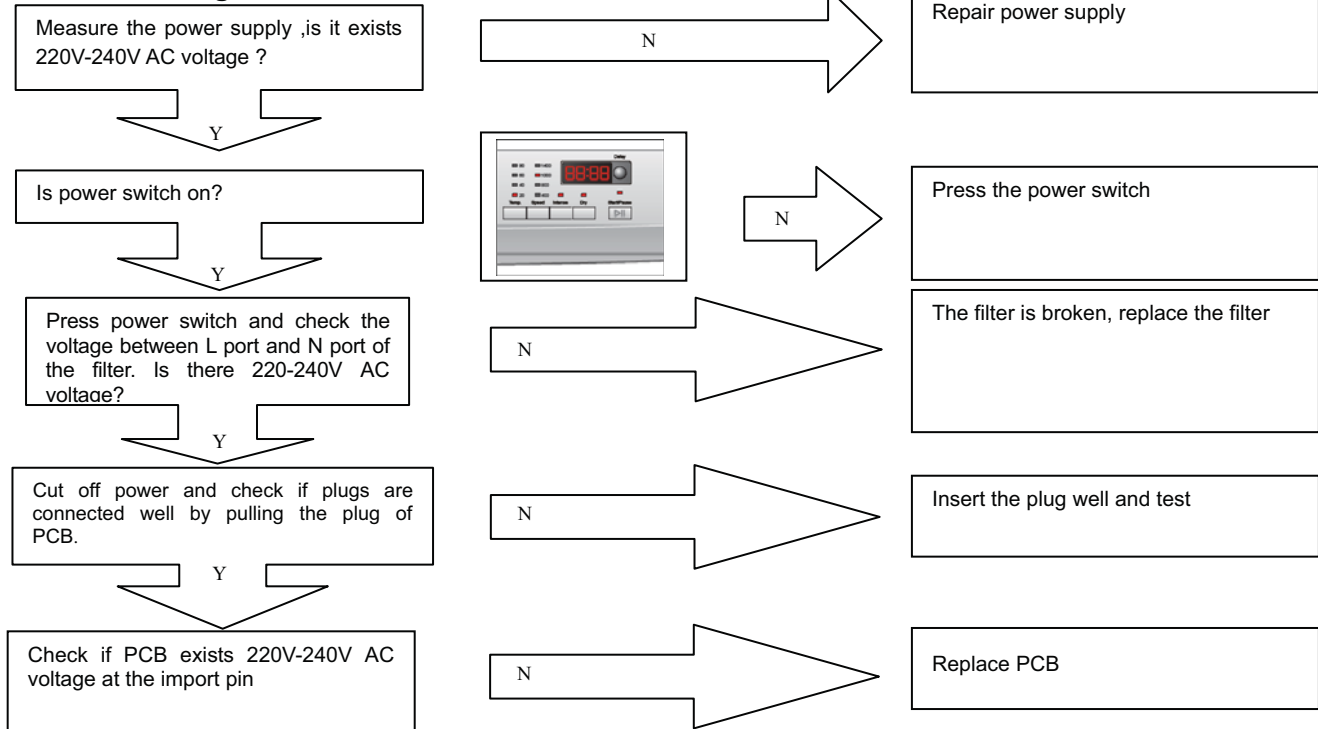
Troubleshooting



7-3. Examination & Troubleshooting

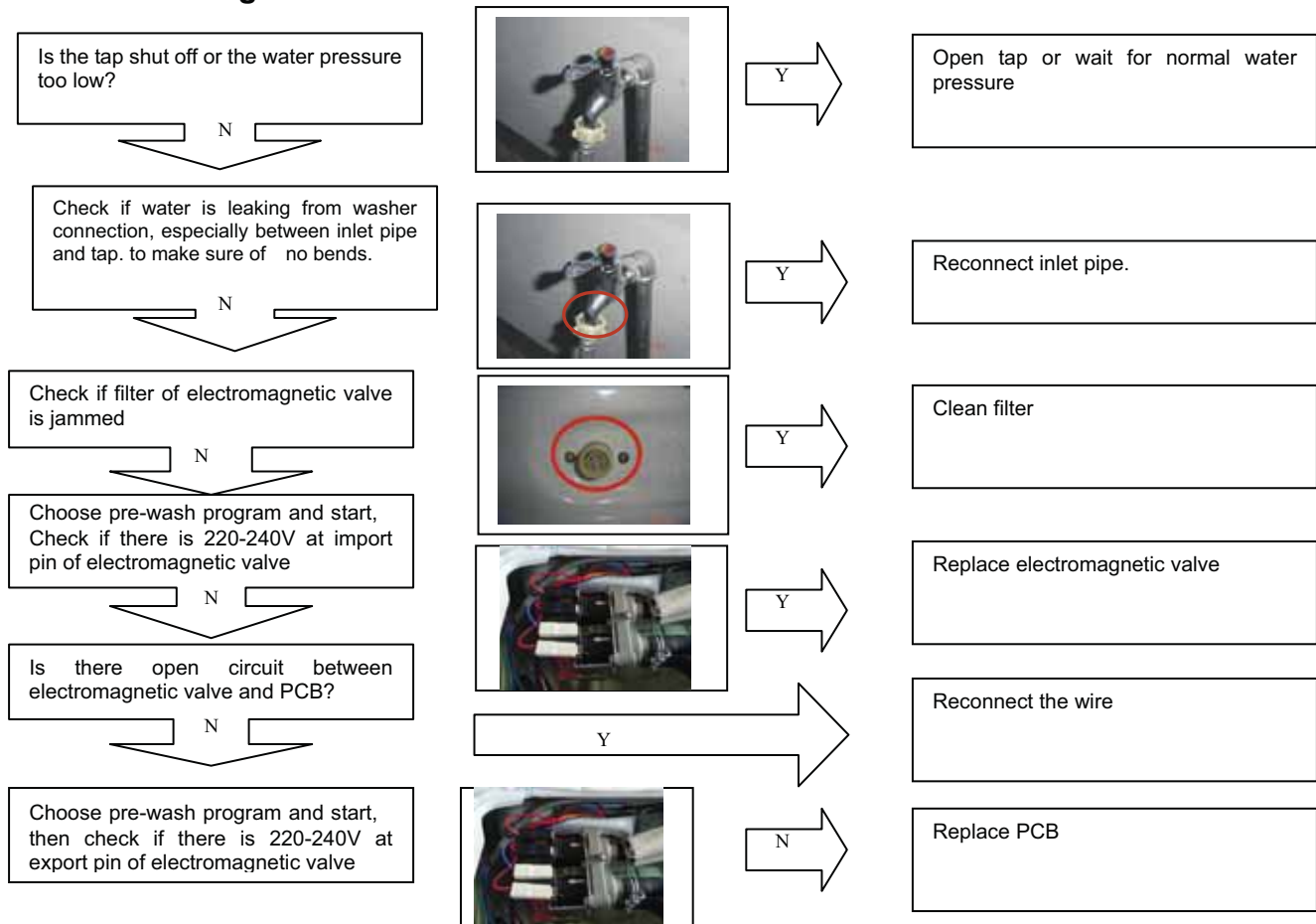
7-3-1. Display nothing

Troubleshooting:



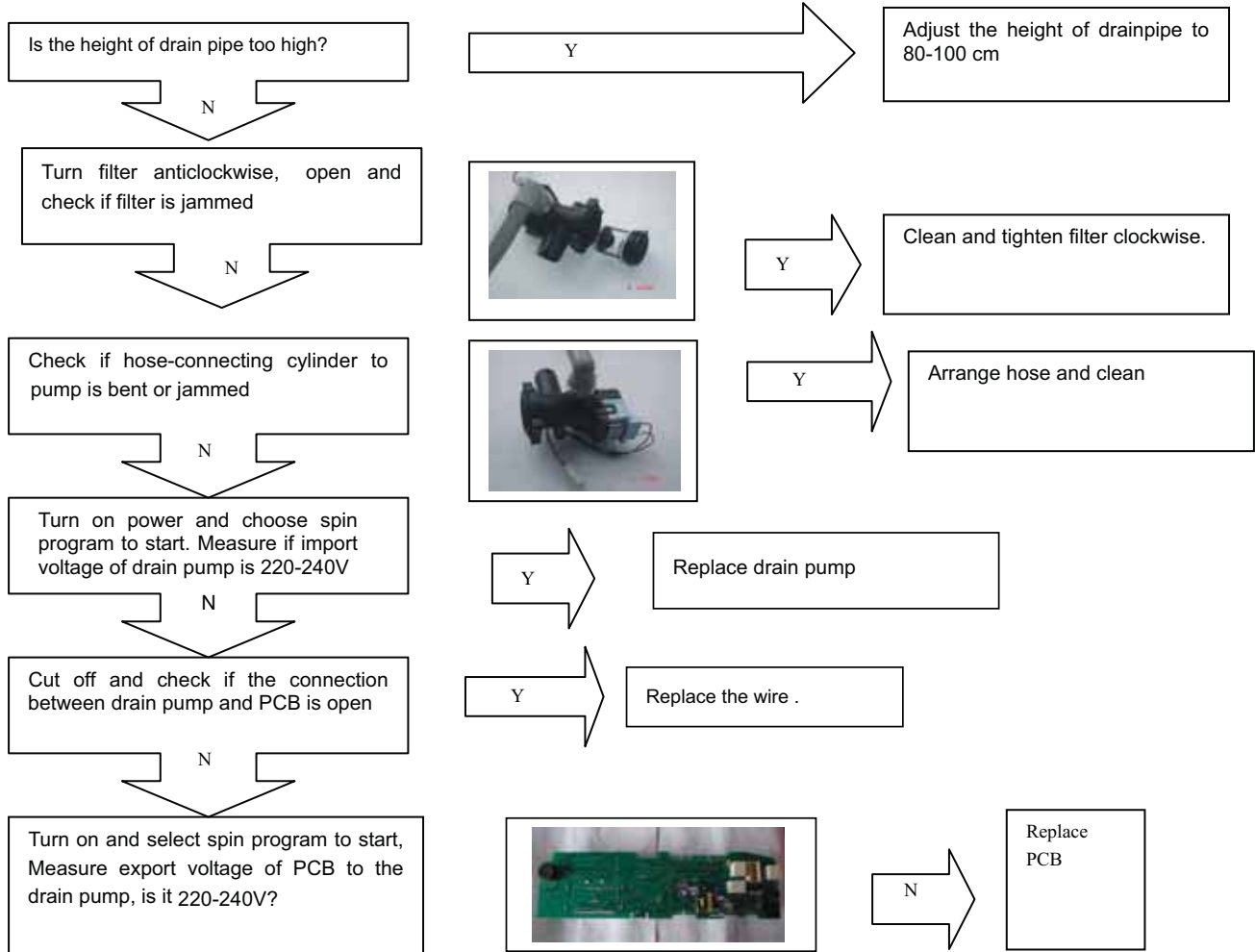
7-3-2. No water inletting

Troubleshooting:



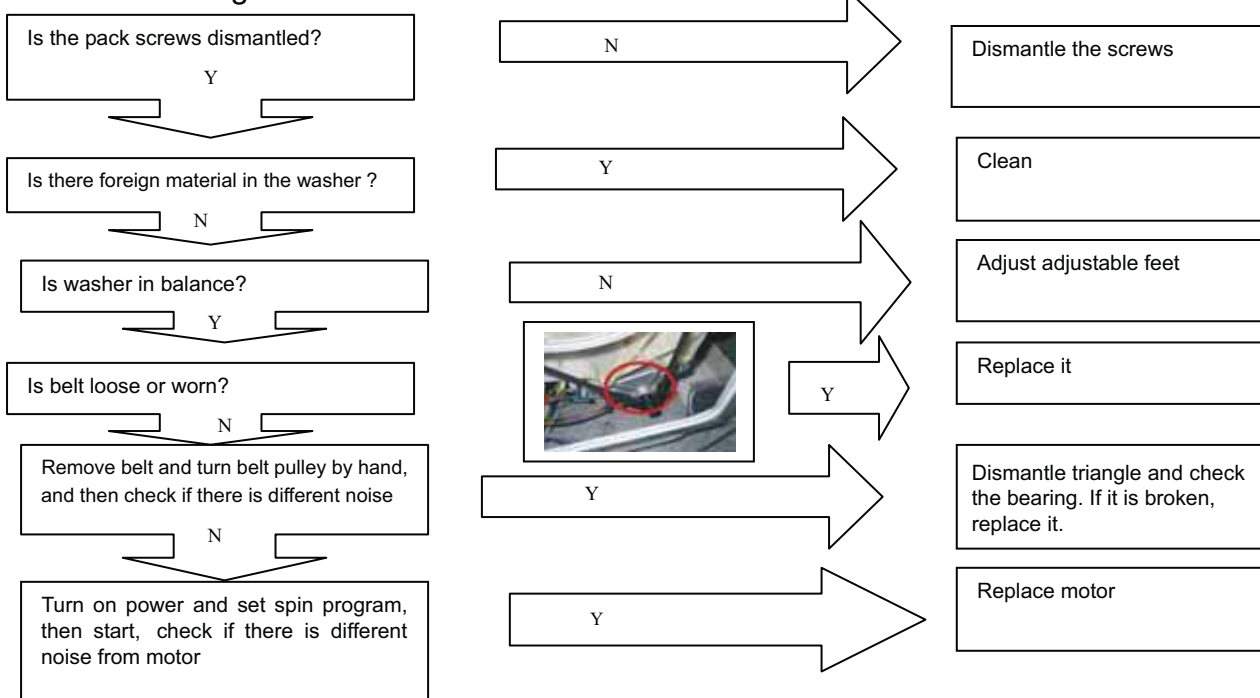
7-3-3. No draining

Troubleshooting:



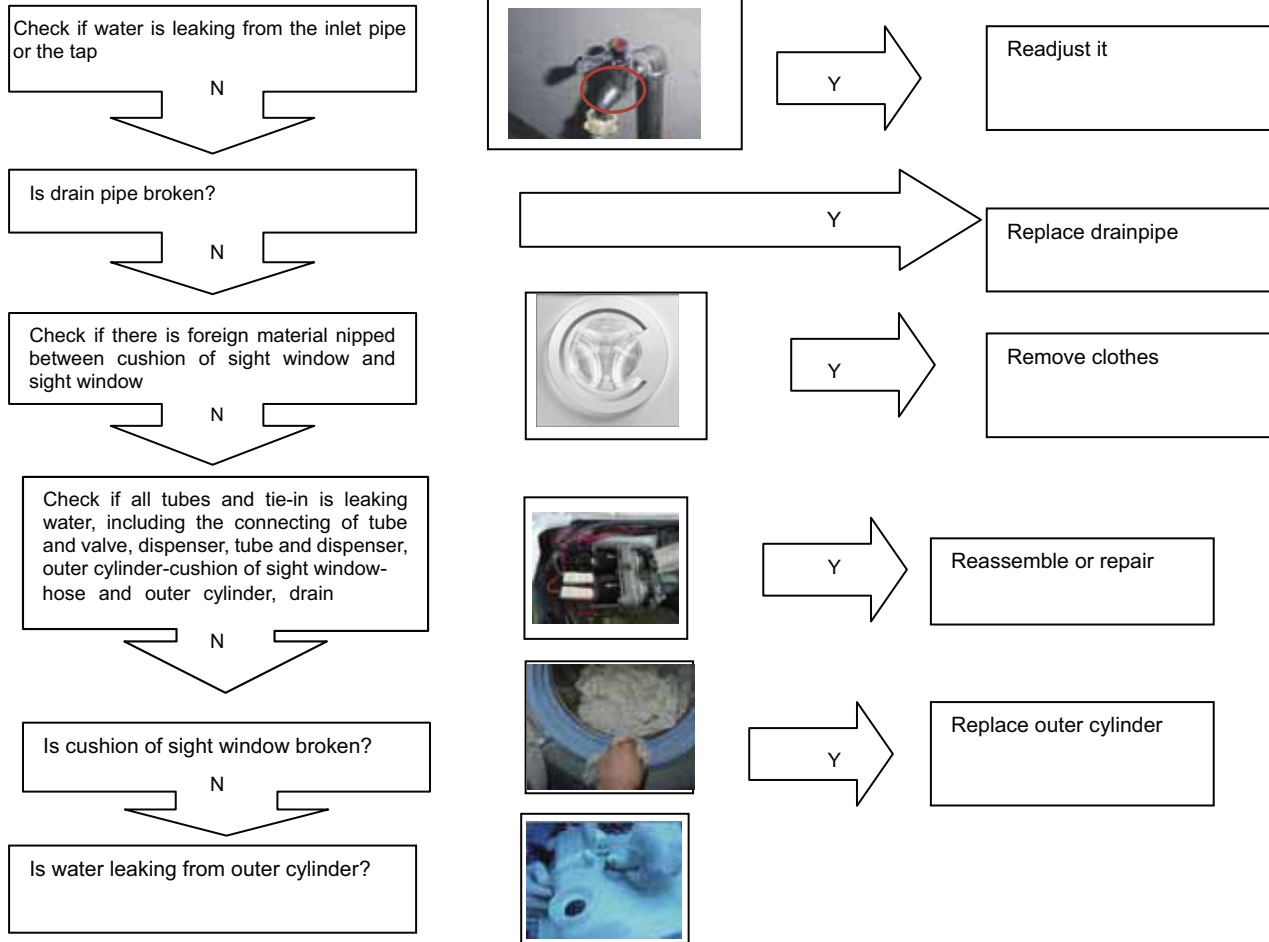
7-3-4. Abnormal noise and vibration

Troubleshooting:



7-3-5. Water leaking

Troubleshooting:



7-4. Parameter of primary electronic appliance

1. The rated voltage , current and frequency of motor

The rated voltage of motor is 220~240V, rated current of motor is 6A, rated frequency of motor is 50/60Hz,

2. Motor protector

At normal temperature, using multimeter to detect 6 and 7 point of motor's socket, to check whether the motor can carry electricity.

3. Electromagnetic valve

At normal temperature, using multimeter to detect both sides of the electromagnetic valve, the electric resistance should be 3-4KΩ.

4. Heater

When the washing machine is working, using multimeter to detect input terminal of the heating pipe, the normal electric resistance is about 30 Ω.

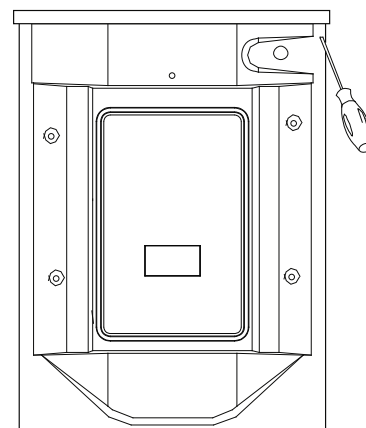
Chapter 8. Disassembly guide

Attention:

1. Pull out the plug before disassembly.
2. Keep the wire away from sharp stuff, avoid any brokage of isolation protector therefore avoid creepage.
3. Collect screws, accecoories and keep them in difference place, avoid missing parts so that the technicians could reassemble them.

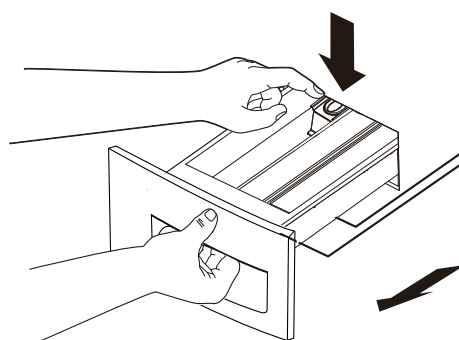
Dismantle the top cover:

1. Dismantle the 2 fixing screws at each side of the top cover.
2. Pull back the top cover and then take it off.



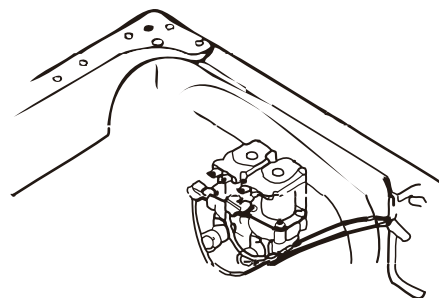
Dismantle the soap dispenser:

1. Press the siphon cover with your forefinger.
2. Pull out the soap dispenser.



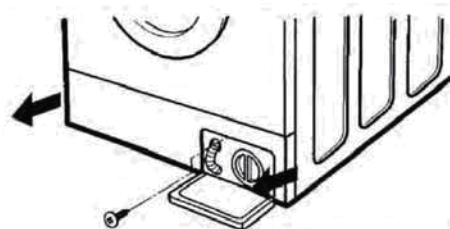
Dismantle the Electromagnetic valve

Pull out the wire connecting the valve, release the two screws and the two clips of hose. Then take off Electromagnetic valve.



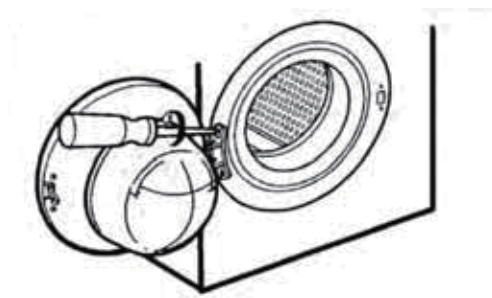
Dismantle the Lower plaque

Open the filter cover with coin, release the screw then take off the lower plaque.



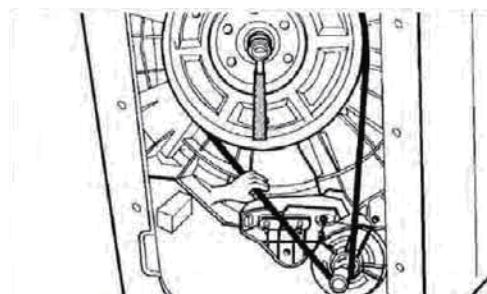
Dismantle the door

Open the door, release the screws fixing the hinge. Then take off the door.



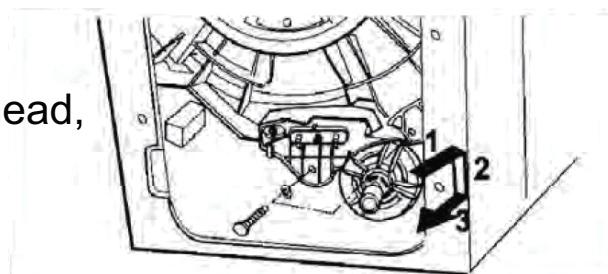
Dismantle the belt pulley

Cut off the power, remove the back cover, take off the belt. Then release the bolt of belt pulley. Then pull out the pulley.



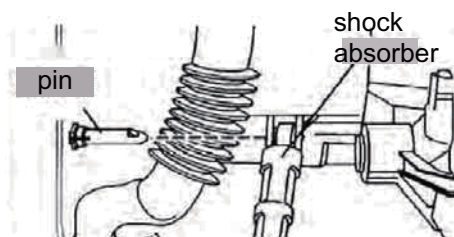
Dismantle the motor

Release the two screws on the Motor bracket. Pull the motor along the arrowhead, then take off the motor.



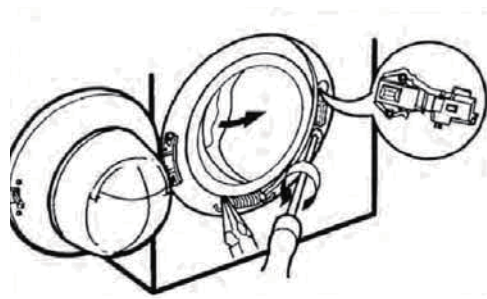
Dismantle shock absorber

Pull out the pin of shock absorber, then take off the bolt and washer of on the cabinet. The pins can not be used again.



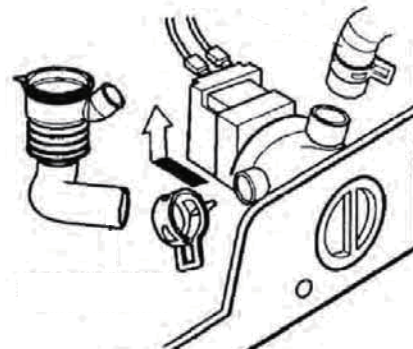
Dismantle the door lock

Take off the tightening ring of rubber cushion, release the two screws of door lock. Pull out the wire connecting the lock, then take the lock out.



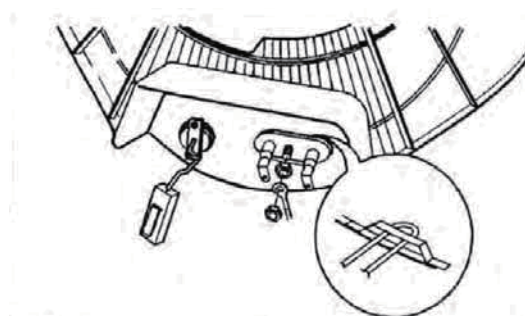
Dismantle the drain pump

Remove the lower plaque. Release the screws fixing the pump. Take off the clips of hose and pull out the wire, then take out the drain pump.



Dismantle the heater

Pull out the wire connecting the heater. Release the nut on the heater. shake the heater and take it out.



Note: If there are some thing such as coins and caddice between inner drum and outer tub, you can disassemble the heater and take them out.

Chapter 9 Componenten

Einzelteil Object/part No.	Hersteller Manufacturer/ trademark	Typ/Modell Type/model	Technische Daten Technical data	Geprüft nach Standard	Prüfzeichen Mark(s) of conformity
see separate sheet					
PCB					
1.PCB ASSEMBLY (display)	Haier Interlligent Electronics Co.Ltd.	0021800059	220-240V 50Hz/60Hz	/	Test with appliance
2. PCB	Changzhou Aohong Electronics Co., Ltd	KB-6160	FR-4	E303981	UL
	KunShan china thrive circuit board co.ltd	KB-616XS 、 SN-L4 、 FR-4-86-PY/UV Block FR-4-86	FR-4	E227809	UL
2.Transformer T1	Shenzhen meikai Electronics Stock Co.,Ltd.	BCK-1941/2250	2mH±10%	E239832	UL
	Qingdao Jingshi Electronics Co.,LTD.	BCK-25-2521	2mH±10%	E353025	UL
	Jiangsu Taichang Electronics Co.,LTD.	BCK-EI22-09208	2mH±10%	E341237	UL
3.X2 CX2	Pilkor Electronics Co.Ltd	PCX2 337F60104	X2,0.1UF 275VAC	IEC/EN132400	VDE
	Xiamen Faratronic Co.,Ltd.	MKP61	X2,0.1UF 275VAC	IEC/EN132400	VDE
	EPCOS(Zhuhai FTZ)Co., Ltd	B32922C3104M2 89	X2,0.1UF 305VAC	IEC/EN132400	ENEC
	Okaya electric industries Co., Ltd.	LE104-M	X2,0.1UF 275VAC	IEC/EN132400	VDE
	Nistronics (Jiangxi) Co.,Ltd	MPRC 0275K104M0000 035	X2,0.1UF 275VAC	IEC/EN132400	VDE
	Jimson Electronics (Xiamen)Co.,Ltd	MKP104K/275VA C P15	X2,0.1UF 275VAC	IEC/EN132400	VDE
	Ultra Tech Xiphi Enterprise Co.Ltd	HQX104K275I15 SNY	X2,0.1UF 275VAC	IEC/EN132400	ENEC

4.X2Capacitor CX1	Pilkor Electronics Co.Ltd	PCX2 337J60334	X2,0.0047UF 275VAC	IEC/EN132400	ENEC
	Xiamen Faratronic Co.,Ltd.	MKP61	X2,0.0047UF 275VAC	IEC/EN132400	VDE
	EPCOS(Zhuhai FTZ)Co., Ltd	B32921C3473K2 89	X2,0.0047UF 305VAC	IEC/EN132400	VDE
	Okaya electric industries Co., Ltd.	LE104-M	X2,0.0047UF 275VAC	IEC/EN132400	ENEC
	Nistronics (Jiangxi) Co.,Ltd	MPRC 0275K472000000 35	X2,0.0047UF 275VAC	IEC/EN132400	VDE
	Jimson Electronics (Xiamen)Co.,Ltd	MKP472K/275VA C P10	X2,0.0047UF 275VAC	IEC/EN132400	VDE
	Ultra Tech Xiphi Enterprise Co.Ltd	HQX472K275F15 SNY	X2,0.0047UF 275VAC	IEC/EN132400	VDE
5. Relay K1	Xiamen Hongfa Electroacoustic Co.,Ltd.	JZC-32F/012-HS	5A 250VAC 5A 30VDC	IEC/EN61810	VDE
	Tyco Electronics (shenzhen) Co., Ltd	OJE-SH-112DM	5A/250VAC	IEC/EN61810	VDE
	Anhui Mingguang Life Electronic Co.,Ltd	BJ-SS-112DM	10A125VAC 5A250VAC/30VDC	IEC/EN61810	TUV
	Xiamen Song Chuan Precision Co., LTD.	307-1AH-C	5A/250VAC	IEC/EN61810	TUV
Relay K2,K3,K4	Anhui Mingguang Life Electronic Co.,Ltd	BRD-SS-112L	12A/7A250VAC 15A125VAC	IEC/EN61810	TUV
	Xiamen Song Chuan Precision Co., LTD.	812H-1C-V	10A/8A/277VAC	IEC/EN61810	VDE
	Omron Electronic Components (Shenzhen) Ltd.	G5LA-14	10A/250VAC,5A/2 50VAC	IEC/EN61810	VDE
	Xiamen Hongfa Electroacoustic Co.,Ltd.	HF3FD-012-ZSTF (245)	10A/250VAC	IEC/EN61810	VDE
6. Varistor RV1,	EPCOS (Zhuhai FTZ) Co., Ltd.	B72214S2351K5 02	Imax: 8000A V1mA: 560V	IEC/EN61051	VDE
7.Varistor RV2, RV3	EPCOS (Zhuhai FTZ) Co., Ltd.	B72207S2271K1 01	Imax: 1200A V1mA: 430V	IEC/EN61051	VDE
	Thinking (Changzhou) Electronic Co Ltd	TVR07431	Imax : 1200A V1mA: 430V	IEC/EN61051	VDE

1.PCB ASSEMBLY (drive board)	Haier Interlligent Electronics Co.Ltd.	0021800052	220-240V 50Hz/60Hz	/	Test with appliance
2.PCB	Changzhou Haihong Electronics Co.Ltd.	KB-5150	CEM-1	E166702	UL
	Changzhou Haihong Electronics Co.Ltd.	ZD-95GF	CEM-1	E166702	UL
	HT Circuits (Qingdao) Co.,Ltd.	S3155	CEM-1	E56334	UL
	HT Circuits (Qingdao) Co.,Ltd.	S3116	CEM-1	E56334	UL
	HT Circuits(Qingdao) Co., Ltd.	KB5150	CEM-1	E56334	UL
	HT Circuits(Qingdao) Co., Ltd.	KB5150	CEM-1	E56334	UL
	HT Circuits(Qingdao) Co., Ltd.	ZD-95(G)F	CEM-1	E56334	UL
	HT Circuits(Qingdao) Co., Ltd.	DS7106	CEM-1	E56334	UL
3. C9	EPCOS Electronic Components S.A. .	B3292#	X2,0.047UF 305VAC	IEC/EN132400	VDE
	Okaya electric industries Co., Ltd.	LE473M	X2,0.047UF 275VAC	IEC/EN132400	ENEC
	Pilkor Electronics Co.Ltd	PCX2	X2,0.047UF 275VAC	IEC/EN132400	ENEC
	Nistronics (Jiangxi) Co.,Ltd	MPR	X2,0.047UF 275VAC	IEC/EN132400	VDE
	ultra tech xiphi enterprise co., ltd	HQX	X2,0.047UF 275VAC	IEC/EN132400	VDE
	Xiamen Faratronic Co.,Ltd.	MKP61	X2,0.047UF 275VAC	IEC/EN132400	VDE
	Jimson Electronics (Xiamen)Co.,Ltd	MKP	X2,0.047UF 275VAC	IEC/EN132400	VDE
5. Relay K1,K2,K3	OMRON	G5LA-1	NO:10A/250VAC,N C:5A/250VAC	IEC/EN61810	VDE
	Xiamen Song Chuan Precision Co., Ltd.	812H	NO/NC:10A/8A/277 VAC	IEC/EN61810	VDE
	Xiamen Hongfa Electroacoustic Co.,Ltd.	HF3FD-012-ZSTF (245)	10A/250VAC	IEC/EN61810	VDE

Others(universal)					
1.Power Cord	Various	H05VV-F	3G*1.5mm ²	DIN VDE 0281	VDE
2.Power Plug	Various	Various	AC 250V, 16A,	DIN VDE 0620	VDE
	Chau's Electrical Company Limited	BS-01	AC 250V; 13A	BS1363	BSI
	LEONI Cabel (Changzhou) Co., Ltd	CW3201	AC250V 13A	BS1363	KEMA
	Fund Resources Electric Industry Co.,Ltd.Shanghang	BS-01J	AC250V 13A	BS 1363	ASTA
3.Heating Element (double fuse)	Hangzhou Kawai Electric Co.,Ltd	WACDD5141	230V 1800W	IEC/EN 60335-1	VDE
Thermal link (in heater)	Emerson Electric(Shenzhen) Co.,Ltd.	G5	250V 16A, 167℃	IEC/EN 60691	VDE
4.Heating Element (double fuse)	Zoppas Industries Hangzhou Ltd.(ZIH)	RW8TF	230V 1800W	IEC/EN 60335-1	VDE
Thermal link (in heater)	Emerson Electric(Shenzhen) Co.,Ltd.	G5	250V 16A, 184℃	IEC/EN 60691	VDE
Alternative	Emerson Electric(Shenzhen) Co.,Ltd.	G4	250V 10A, 184℃	IEC/EN 60691	VDE
5.Heating Element (double fuse)	Zoppas Industries Hangzhou Ltd	NW84TF	230V 1800W	IEC/EN 61770	VDE
Thermal link (in heater)	Sung Woo Industrial Co.	SW-120T	250V 10A , 167℃	IEC/EN 60691	VDE
6. Water level sensor	Hangzhou Kambayashi Electrics Co.,Ltd.	PS2SP-B1	DC5.0V	IEC/EN 60335	Tested with appliance
	Dongguan Ark-les Elec.Components Co.,Ltd.	ST-545	DC5.0V	IEC/EN 60335	Tested with appliance
7.Water inlet valve 0024000274	Hangzhou Kambayashi Electrics Co.,Ltd.	FCF-22-B6	AC 220-240V, 50/60Hz,	IEC/EN 60730	Tested with appliance

8. Micro-delay door switch	Dongguan Ark-les Electric Components Co.,Ltd	ZV-446	250V 16(6)A, T85	IEC/EN 60730	VDE
	ROLD	DA	250V 16(6)A, T85	IEC/EN 60730	ENEC
9. Filter	Aerodev Electromagnetic Tech.Inc	DNF06-Q (RALA)	12A,250VAC. 50/60hz.25/085/21 L: 2x($\geq$ 4mH) C: (0.68+0.47)UF (X2) 2x4700pF(Y)	IEC60939 /EN133200	SEMKO
10. Water Inlet Hose	Zhejiang Dongyang Yidan,Electron Make Co.,Ltd.	XG	3/4" 70° C	IEC/EN 61770	VDE
	Zhejiang Dongyang Yidan,Electron Make Co.,Ltd.	XG-1	3/4" 25° C	IEC/EN 61770	VDE
	Taizhou Hualong Household Appliance Accessory Co., Ltd.	V70D	70° C PVC; Outside 16mm; thread 3/4"	IEC/EN 61770	VDE
	Wuxi Jinhua Electrical controlling Equipments factory	GJS-150CX	3/4" 25° C	IEC/EN 61770	VDE
	Wuxi Jinhua Electrical controlling Equipments factory	GJS-150CXH	3/4" 90° C	IEC/EN 61770	VDE
Mechanical Valve with hose set	Wuxi Jinhua Electrical controlling Equipments factory	GJS-FL-115H	10bar 90° C MAX	IEC/EN 61770 IEC/EN 60730	VDE
Alternative (mechanical VALVE)	Eltek S.p.A.	100269...	10bar 90° C MAX	IEC/EN 60730	VDE

11. PUMP	Jiangmen Hanyu Electrical Co., Ltd.	B20-6A	AC 220-240V, 50HZ	IEC/EN 60335	TUV
	Askoll (China) Motor Technologies Co., Ltd	S3000	220-240V, 50HZ 25W, 0.2A	IEC/EN 60335	VDE
	Changzhou Leshi Leili Motor Co., Ltd	BPX2-34	AC 220-240V, 50HZ	IEC/EN 60335	VDE
Protector for Hanyu pump	Changzhou City Tong Li Electronic Co., Ltd.	KW-90	85~95 °C	IEC/EN 60730	VDE
	Jiangsu Changsheng Electric Appliance Co., Ltd	BR-A90	AC 250V 85~95 °C	IEC/EN 60730	VDE
	Changzhou changsheng Tong Li Electronic Co., Ltd.	KW-A2	AC250V 85~95 °C	IEC/EN 60730	VDE
Protector for Askoll pump	Sensata Technologies Holland, B.V.	7AM037	150°C	IEC/EN 60730	KEMA
	Tyco Electronics	CP17AM150	150°C	IEC/EN 60730	VDE
	Sensata Technologies Holland, B.V.	17AMC 150	150°C	IEC/EN 60730	KEMA
	Jiangsu Changsheng Electric Appliance Co., Ltd	17AM-D150	150°C	IEC/EN 60730	KEMA
	Sensata Technologies for S3000	3MP*	145°C	IEC/EN 60730	VDE
	Tyco Electronics (for S3000)	CP17AM145A	145°C	IEC/EN 60730	VDE
Protector for Leshi pump	Changzhou Ainuo Electronics Technical Co., Ltd.	KW-105	AC220V 105°C	IEC/EN 60730	VDE
	Jiangsu Changsheng Electric Appliance Co., Ltd.	BR-A	AC250V 105°C	IEC/EN 60730	VDE

12.Aqua proof	Toneluck Electro-Mechanics (Huizhou) Co., Ltd.	L50	0.1A 125/250VAC 1E5,40T85	IEC/EN 61058	ENEC
13.Protector for haier motor	Chwen-Der Thermostat & Co.,Ltd.	CD79	AC250V, operating temperature 145± 5°C	IEC/EN 60730	VDE
	Sensata Technologies ,Holl and,B.V.	17AM216A5	AC250V, operating temperature 145± 5°C	IEC/EN 60730	ENEC
14.Protector for weiling motor	Sensata Technologies ,Holl and,B.V.	17AM216A5	AC250V, operating temperature 145± 5°C	IEC/EN 60730	ENEC
15.Heating Element to dryer	Kawai	0024000223	AC 220V, 1200W	IEC/EN 60335	Test with appliance
16.Non self-resetting thermal cut-off	Emerson Electrical (Shenzhen) Co.,Ltd.	36T	Off:160±8°C	IEC/EN 60730	VDE
17.Self-resetting thermal limiter	Emerson Electrical (Shenzhen) Co.,Ltd.	36T	Off:130±4°C, On:103±6°C	IEC/EN 60730	VDE
18.capacitor for drying fan motor	Panasonic Electrical (Jiangmen) Co.,Ltd.	451series	450V 50/60Hz 1.5uF±5%	IEC/EN 60252	TUV
Alternative	Anhui Feida Industry Stock Co.,Ltd.	CBB65A-1	450V 50/60Hz 1.5uF	IEC/EN 60252	VDE
19. Drying Motor	Ebm-papst Mulgingen GmbH&Co.,Ltd	R2E133-BE49-C 05	230VAC 50Hz 2300 (r/min) 1.5uf	IEC60335	CE

Chapter 10 Washing process table

CYCLE STEP COURSE		Washing										Rinse														Spin			* Disentangle : D·T		Normal Working Time (Hour:Minute)	
		Pre				Main						Normal										Rinse +										
		W·S	Washing	Drain	I·S	W·S	Washing		Staycooling		3				2				1				4				Drain	Spin	D·T			
							Heating	Washing	W·S	Rinsing	Drain	Drain	I·S	W·S	Rinsing	Drain	I·S	W·S	Rinsing	Drain	I·S	W·S	Rinsing									
Time (SEC)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	20	20	
	120	600	120	240	120		MIN	120	60	60	60	180	120	240	60	180	120	240	60	180	120	240	60	180	120	240	60	MIN	60		30	30
Pre-wash cotton																																About 1:22
Standrard cotton																																About 1:20
Eco cotton																																About 1:06
Synthetic																																About 1:08
Wool																																About 1:05
Quick Wash																																About 0:15
Mix																																About 1:14
Delicate																																About 0:44
Rinse																																About 0:23
Spin																																About 0:12
Dry																																About 2:20

*  Basic Cycle*  Optional Cycle

* Pre-Setting Time : Water Supply - 120 sec.

Drain - 60 sec.

* ~ Time for varies as the temperature or the amount of laundry

* Basic time is minute in washing chart

* The actual program time can be varied with the load amount, water temperature or ambient temperature

- Pre Wash : • If the laundry is heavily soiled, "Pre Wash" course is effective.
• Pre Wash is available in Cotton .
- Crease Care : • If you want to prevent crease, select this button with spin speed.